AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-56 (Canceled)

57. (Currently amended) A high-throughput method for screening one or more test compounds to identify those that exert an effect on an intracellular biological or chemical process, the method comprising steps of:

a. introducing into each of a plurality of reaction vessels:

a plurality of cells; and

one or more test compounds whose effect on an intracellular biological or chemical process is to be evaluated;

b. introducing into each of the reaction vessels an antibody characterized in that it associates intracellularly with a biological component whose presence or amount reveals the effect of a given test compound on the biological or chemical process; and

c. assaying for association between the antibody and the biological component in the reaction vessels to assess the presence or amount of the biological component, thereby revealing the effect of the test compound on the biological or chemical process;

wherein the plurality of reaction vessels comprises at least 96 reaction vessels.

58. (Currently amended) A high-throughput method for ~~screening~~ obtaining a functional fingerprint of one or more test compounds; said method comprising steps of:

a. introducing into each of a plurality of reaction vessels:

a plurality of cells; and

one or more test compounds whose ~~effect on an intracellular biological or chemical process is to be evaluated~~ effects on a plurality of intracellular biological or chemical processes are to be recorded as a functional fingerprint;

b. introducing into each of the reaction vessels ~~a first~~ an antibody characterized in that it associates intracellularly with a biological component whose presence or

amount reveals the effect of a given test compound on ~~the~~ a given biological or chemical process;

c. assaying for association between the ~~first~~ antibody and the biological component in ~~the reaction vessels~~ each reaction vessel to assess the presence or amount of the biological component, thereby revealing the effect of the test compound on the given biological or chemical process; and

~~d. repeating step a;~~

~~e. introducing into each of the reaction vessels a second antibody characterized in that it associates intracellularly with a biological component whose presence or amount reveals the effect of a given test compound on the biological or chemical process;~~

~~f. assaying for association between the second antibody and the component in the reaction vessels;~~

~~g. optionally repeating steps d-f, wherein the second antibody is a third antibody; and~~

h. ~~retaining the information as~~ recording the effects of each test compound on the plurality of intracellular biological or chemical processes, thereby establishing a functional fingerprint for each test compound;

wherein the plurality of reaction vessels comprises at least 96 reaction vessels.

59. (Previously presented) The method of claim 57 or 58 further comprising the step of removing unassociated antibody from each reaction vessel.

60. (Previously presented) The method of claim 57 or 58 wherein the biological component is a direct participant in or a product of the biological or chemical process.

61. (Canceled)

62. (Canceled)

63. (Previously presented) The method of claim 57 or 58 wherein the antibody is conjugated to horseradish peroxidase.

64. (Currently amended) The method of claim 57 or 58 wherein the method further comprises introducing a secondary ligand that binds specifically to said antibody, and wherein the step of assaying comprises assaying for bound secondary ligand.

65. (Canceled)

66. (Currently amended) The method of claim 64 ~~or 65~~ wherein in the step of assaying, the secondary ligand is assayed intracellularly.

67. (Currently amended) The method of claim 64 ~~or 65~~ wherein the secondary ligand is an antibody.

68. (Previously presented) The method of claim 67 wherein the antibody is conjugated to horseradish peroxidase.

69. (Currently amended) The method of claim ~~57 or 64~~ 57 or 58 wherein the step of assaying utilizes a detection technique selected from the group consisting of: chemiluminescence, fluorescence, phosphorescence, radioactivity, colorimetry, Ultra-Violet spectroscopy, and Infra-Red spectroscopy.

70. (Canceled)

71. (Previously presented) The method of claim 57 or 58 wherein, in the step of introducing the cells in each of the plurality of reaction vessels, the cells adhere to the reaction vessel surface.

72. (Previously presented) The method of claim 57 or 58 further comprising the step of providing one or more solutions containing at least one reagent characterized in that,

when contacted with the cells, it perturbs or functions as an indicator of the intracellular biological or chemical process.

73. (Previously presented) The method of claim 72 further comprising the step of contacting the cells with the one or more solutions under suitable conditions for the reagent to perturb or function as an indicator of the intracellular biological or chemical process in the cells.

74. (Previously presented) The method of claim 73 wherein the intracellular biological or chemical process is DNA synthesis and the reagent comprises a natural or non-natural nucleotide.

75. (Previously presented) The method of claim 74 wherein the reagent is 5-bromodeoxyuridine.

76. (Previously presented) The method of claim 57 or 58 wherein the intracellular biological or chemical process is a covalent modification of an intracellular component.

77. (Previously presented) The method of claim 76 wherein the covalent modification is an intracellular biological reaction.

78. (Previously presented) The method of claim 77 wherein the intracellular biological reaction is nucleic acid synthesis, protein cleavage, peptide cleavage, carbohydrate addition, carbohydrate cleavage, metabolism of cellular components or synthesis of cellular components.

79. (Previously presented) The method of claim 76 wherein the covalent modification is a post-translational event and the intracellular component is a protein.

80. (Previously presented) The method of claim 79 wherein the post-translational event is protein glycosylation, methylation, lipidation, isoprenylation, ubiquitination, phosphorylation or acetylation.

81. (Previously presented) The method of claim 57 or 58 wherein the intracellular biological or chemical process is a post-translational modification of a protein, and the antibody interacts with the post-translationally modified protein.

82. (Canceled)

83. (Previously presented) The method of claim 57 or 58 wherein the cells are from the same cell –line.

84. (Withdrawn) The method of claim 57 or 58 wherein the cells are from a plurality of cell – lines.

85. (Previously presented) The method of claim 57 or 58 wherein at least a subset of the cells comprises a eukaryotic cell.

86. (Previously presented) The method of claim 57 or 58 wherein at least a subset of the cells comprises a mammalian cell.

87. (Previously presented) The method of claim 57 or 58 wherein at least a subset of the cells comprises a human cell.

88. (Previously presented) The method of claim 57 or 58 wherein at least one test compound is from a synthetic source.

89. (Previously presented) The method of claim 88 wherein the test compounds are from a combinatorial library.

90. (Previously presented) The method of claim 89 wherein the test compounds are covalently bound on a solid support, the method further comprising the step of dissociating the test compounds from the solid support.

91. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are designed to receive a volume of liquid less or equal to approximately 200 microliters.

92. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are designed to receive a volume of liquid less or equal to approximately 50 microliters.

93. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are designed to receive a volume of liquid less or equal to approximately 2 microliters.

94. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are designed to receive a volume of liquid less or equal to approximately 250 nanoliters.

95. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are arranged in a two-dimensional array with sufficient density that the center-to-center distance between adjacent vessels is less than about 8.5 millimeters.

96. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are arranged in a two-dimensional array with sufficient density that the center-to-center distance between adjacent vessels is less than about 4.5 millimeters.

97. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are arranged in a two-dimensional array with sufficient density that the center-to-center distance between adjacent vessels is less than about 2.25 millimeters.

98. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are arranged in a two-dimensional array with sufficient density that the center-to-center distance between adjacent vessels is less than about 1 millimeter.

99. (Previously presented) The method of claim 57 or 58 wherein the number of reaction vessels is greater than or equal to approximately 384 and the reaction vessels occupy a surface smaller than or equal to approximately 128×86 mm^2.

100. (Previously presented) The method of claim 57 or 58 wherein the number of reaction vessels is greater than or equal to approximately 1500 and the reaction vessels occupy a surface smaller than or equal to approximately 128×86 mm^2.

101. (Previously presented) The method of claim 57 or 58 wherein the number of reaction vessels is greater than or equal to approximately 6000 and the reaction vessels occupy a surface smaller than or equal to approximately 128×86 mm^2.

102. (Previously presented) The method of claim 57 or 58 wherein in the step of introducing the test compounds into the plurality of reaction vessels, the test compounds are the same or different.

103. (Previously presented) The method of claim 57 or 58 wherein in the step of introducing the test compounds into the plurality of reaction vessels, each reaction vessel contains one test compound.

104. (Previously presented) The method of claim 57 or 58 wherein at least one test compound is from a natural source.

105. (New) The method of claim 58 wherein the reaction vessels are wells of a 96-, 384-, 1536- or 6144-well plate.

106. (New) The method of claim 105 wherein the same test compound is introduced in each of the wells and a different antibody is introduced in each well.

107. (New) The method of claim 105 wherein a the same test compound and a different antibody are introduced in each well across a row, and a different test compound and the same antibody are introduced in each well down a column.